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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,351	03/09/2005	Yusuke Suzuki	S1459.70065US00	4788

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EXAMINER	
WONG, EDNA	

ART UNIT	PAPER NUMBER
1795	

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02/23/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/527,351	SUZUKI ET AL.	
	Examiner	Art Unit	
	EDNA WONG	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 January 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6 and 8-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6 and 8-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

This is in response to the Amendment dated January 27, 2009. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Response to Arguments

Claim Objections

Claim **4** has been objected to because of minor informalities.

The objection of claim 4 has been withdrawn in view of Applicants' amendment.

Claim Rejections - 35 USC § 112

I. Claims **1-4 and 6-17** have been rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

With regards to claim ***1, line 5***, and claims ***7 and 11-13***, the rejection under 35 U.S.C. 112, first paragraph, has been withdrawn in view of Applicants' remarks.

With regards to claim ***1, line 7***, the rejection is as applied in the Office Action dated November 7, 2008 and incorporated herein. The rejection has been maintained for the following reasons:

Claim 1

line 7, recites "a light sensitizer".

Applicants' specification discloses a sensitizing ***dye*** and that semiconductor particles can be used as sensitizing materials as well as the organic sensitizing **dyes** (page 7, lines 11-21).

Applicants cannot claim a material broader than dyes and semiconductor particles as the sensitizing materials.

II. Claims **2, 4 and 14** have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The rejection of claims 2, 4 and 14 under 35 U.S.C. 112, second paragraph, has been withdrawn in view of Applicants' amendment.

Claim Rejections - 35 USC § 103

I. Claims **1-4, 7, 14 and 17** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Fujimori et al.** (US Patent No. 6,683,244 B2).

With regards to claim ***7***, the rejection under 35 U.S.C. 103(a) as being unpatentable over Fujimori et al. has been withdrawn in view of Applicants' amendment.

With regards to claims ***1-4, 14 and 17***, the rejection under 35 U.S.C. 103(a) as being unpatentable over Fujimori et al. is as applied in the Office Action dated

November 7, 2008 and incorporated herein. The rejection has been maintained for the following reasons:

Applicants state that Fujimori does not teach or suggest a transparent electrode having a resistance of about 5 Ω/cm^2. Notably, the Office Action does not allege that Fujimori discloses a resistance as low as 5 Ω /cm^2. The Office Action alleges, however, that the "invention as a whole" would have been obvious to one having ordinary skill in the art because Fujimori et al. purportedly teaches the same transparent electrode as presently claimed. Applicants respectfully disagree because Fujimori clearly states that the resistance of barrier layer 8 is much higher than the resistance recited in claim 1 of the present application. Fujimori states that the resistance of barrier layer 8 is larger than about 100 Ω /cm^2, and preferably larger than 1 Ω /cm^2 (col. 2, lines 44-55). ***Fujimori's device is therefore clearly different from the electrode recited in claim 1 because Fujimori's barrier layer 8 has a much larger resistance than 5 Ω /cm^2***.

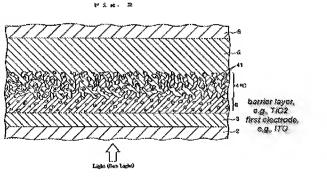
Applicants state that the Office Action has not provided any rationale as why one of ordinary skill in the art would have modified Fujimori's barrier layer to have the ***properties recited in claim 1*** of the present application, as required to support a rejection under 35 U.S.C. § 103. One of ordinary skill in the art would not have been motivated to reduce the resistance value of Fujimori's barrier layer 8. On the contrary, Fujimori states that it is ***preferable*** that barrier layer 8 have a high resistance in the thickness direction to prevent or suppress short circuits (col. 2, lines 55-60). Thus, Fujimori teaches away from reducing the resistance of barrier layer 8 because doing so

would be contrary to Fujimori's stated goal of preventing short circuits. Based on Fujimori's disclosure, one of ordinary skill in the art would have been led to *increase* the resistance of barrier layer 8, not decrease the resistance. Thus, one of ordinary skill in the art would not have modified Fujimori's device in a manner that meets the limitations of claim 1.

In response, present claim 1, lines 2-5, recites:

"a transparent electrode comprising ***an ITO substrate*** and ***a metallic oxide layer or a derivative layer thereof***, the ITO substrate being coated with the metallic oxide layer or derivative layer thereof, the metallic oxide layer or derivative layer being from 10nm to 100nm thick, the ***transparent electrode*** having a resistance of about 5 Ω/cm^2."

The transparent electrode disclosed by Fujimori is structurally, physically and materially the same as the transparent electrode as presently claimed:



Thus, why wouldn't the transparent electrode disclosed by Fujimori have the property of a resistance of about 5 Ω /cm^2? How can the transparent electrode of ***TiO_2/ITO*** have different resistances, i.e., equal to or greater than 100 k Ω/cm^2 (Fujimori, col. 2, lines 55-60) and about 5 Ω/cm^2 (present claim 1, line 5)? Products of identical chemical composition can not have mutually exclusive properties.

Does Fujimori structurally, physically and/or materially alter his ITO substrate and/or metallic oxide layer to get to a certain resistance? Or is there something more to the ITO substrate and/or the metallic oxide layer or a derivative layer thereof as presently claimed that isn't claimed?

When Applicants claim a product in terms of a function, property or characteristic and the product of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, Applicants should point out the structurally, physically and materially part of the product that would be expected to impart the distinctive structural characteristic to the final product.

Furthermore, Fujimori teaches:

Further, ***it is also preferred that the resistance value in the thickness direction of the total of the barrier layer and the electron transport layer is equal to or greater than 100 kΩ / cm^2***. This makes it possible to prevent or suppress the short-circuiting between the first electrode and the hole transport layer more reliably (col. 2, lines 55-60).

Although ***the resistance in the thickness direction of the barrier layer 8 and the electron transport layer 4 are not limited particularly***, it is preferable that the resistance in the thickness direction of the barrier layer 8 and the electron transport layer 4, that is the resistance in the thickness direction of a laminate of the barrier layer 8 and the electron transport layer 4 is larger than about 100 kΩ / cm^2, and more preferably larger than about 1 kΩ / cm^2. With this choice, short-circuiting between the electrode 3 and the hole transport layer 5 can be prevented or suppressed more reliably. As a result, the reduction in the power generation efficiency of the solar cell 1A can be prevented (col. 12, lines 44-55).

Fujimori teaches that it is the total of the barrier layer **8** and the electron transport layer **4** that has the resistance of equal to or greater than 100 kΩ / cm^2. Can the resistance of equal to or greater than 100 kΩ / cm^2 be applied equivalently to the total of

the barrier layer **8** *and the ITO substrate **3***?

Furthermore, Fujimori teaches that the resistance of "is equal to or greater than 100 kΩ / cm" is a preferred value. The disclosure of reference must be considered for what it fairly teaches one of ordinary skill in the art, pertinence of non-preferred disclosure must be reviewed in such light. *In re Meinhardt* 157 USPQ 270; and MPEP § 2123 and § 2141.02(VI).

II. Claims **6, 10 and 12** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Fujimori et al.** (US Patent No. 6,683,244 B2) as applied to claims 1-4, 7, 14 and 17 above, and further in view of **JP 10-92477** ('477).

The rejection of claims 6, 10 and 12 under 35 U.S.C. 103(a) as being unpatentable over Fujimori et al. as applied to claims 1-4, 7, 14 and 17 above, and further in view of JP 10-92477 ('477) is as applied in the Office Action dated November 7, 2008 and incorporated herein. The rejection has been maintained for the reasons as discussed above.

Applicants' remarks have been fully considered but they are not deemed to be persuasive.

III. Claims **8-9 and 16** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Fujimori et al.** (US Patent No. 6,683,244 B2) as applied to claims 1-4, 7, 14 and 17 above, and further in view of **JP 8-51224** ('224).

The rejection of claims 8-9 and 16 under 35 U.S.C. 103(a) as being unpatentable over Fujimori et al. as applied to claims 1-4, 7, 14 and 17 above, and further in view of JP 8-51224 ('224) is as applied in the Office Action dated November 7, 2008 and incorporated herein. The rejection has been maintained for the reasons as discussed above.

Applicants' remarks have been fully considered but they are not deemed to be persuasive.

IV. Claim **11** has been rejected under 35 U.S.C. 103(a) as being unpatentable over **Fujimori et al.** (US Patent No. 6,683,244 B2) as applied to claims 1-4, 7, 14 and 17 above, and further in view of **Arao et al.** (US Patent No. 5,244,509).

The rejection of claim 11 under 35 U.S.C. 103(a) as being unpatentable over Fujimori et al. as applied to claims 1-4, 7, 14 and 17 above, and further in view of Arao et al. is as applied in the Office Action dated November 7, 2008 and incorporated herein. The rejection has been maintained for the reasons as discussed above.

Applicants' remarks have been fully considered but they are not deemed to be persuasive.

V. Claim **13** has been rejected under 35 U.S.C. 103(a) as being unpatentable over **Fujimori et al.** (US Patent No. 6,683,244 B2) as applied to claims 1-4, 7, 14 and 17 above, and further in view of **Yamada et al.** (US Patent No. 6,566,162 B2).

The rejection of claim 13 under 35 U.S.C. 103(a) as being unpatentable over Fujimori et al. as applied to claims 1-4, 7, 14 and 17 above, and further in view of Yamada et al. is as applied in the Office Action dated November 7, 2008 and incorporated herein. The rejection has been maintained for the reasons as discussed above.

Applicants' remarks have been fully considered but they are not deemed to be persuasive.

VI. Claim **15** has been rejected under 35 U.S.C. 103(a) as being unpatentable over **Fujimori et al.** (US Patent No. 6,683,244 B2) as applied to claims 1-4, 7, 14 and 17 above, and further in view of **Eisenbeiser et al.** (US Patent Application Publication No. 2003/0015700 A1) and **Arao et al.** (US Patent No. 5,244,509).

The rejection of claim 15 under 35 U.S.C. 103(a) as being unpatentable over Fujimori et al. as applied to claims 1-4, 7, 14 and 17 above, and further in view of Eisenbeiser et al. and Arao et al. is as applied in the Office Action dated November 7, 2008 and incorporated herein. The rejection has been maintained for the reasons as discussed above.

Applicants' remarks have been fully considered but they are not deemed to be persuasive.

Response to Amendment

Claim Objections

Claim **14** is objected to because of the following informalities:

Claim 14

line 2, the word "flourine" should be amended to the word -- fluorine --.

Appropriate correction is required.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDNA WONG whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Edna Wong/
Primary Examiner
Art Unit 1795

EW
February 13, 2009